IN THE CLAIMS

The following listing of claims replaces all previous versions.

1. (Original) A method of reducing solar absorptance of a solar panel, the solar panel containing triple junction solar cells, the method comprising the steps of:

providing a coating to be adapted to be disposed about the triple-junction solar cells;

passing desired wavelengths of solar energy through the coating to the triple-junction solar cells;

reflecting undesired wavelengths of solar energy from the coating and away from the triple junction solar cells; and

reflecting unused wavelengths of solar energy from the coating and away from the triple junction solar cells.

2. (Original) The method of claim 1 wherein the desired wavelengths of solar energy is a solar cell transmission band from 0.35 microns to 1.2 microns for near solar incident angles typical of GEO and MEO applications.

3. (Original) The method of claim 1 wherein the desired wavelengths of solar energy is a solar cell transmission band from 0.35 microns to 1.3 microns for solar incident angles typical of LEO applications.

4. (Original) The method of claim 1 wherein the undesired wavelengths of solar energy is reflected below 0.35 microns.

5. (Original) The method of claim 1 wherein the unused wavelengths of solar energy is reflected above 1.2 microns.

6. (Original) The method of claim 1 wherein the solar panel has an electrical conversion gain through lower operating temperature in a spacecraft operating in space.

7. (Original) The method in claim 1 wherein an operation temperature is reduced at least 20 degrees C. for typical of GEO and MEO applications.

8. (Original) The method in claim 1 wherein an operation temperature is reduced at least 26 degrees C. for typical of LEO applications.

9. (Original) A method of improving solar power collection in solar panels with triple-junction solar cells of a satellite comprising the steps of;

providing a near infrared (NIR) wideband reflector coating before the triple-junction cell solar cells;

allowing solar energy wavelengths of at least 0.35 microns through the coating to contact the triple-junction solar cells; and

reflecting solar energy wavelengths below 0.35 microns and above at least 1.2 microns from the coating and away from the triple-junction solar cells.

10. (Original) The method of claim 9 wherein solar energy wavelengths of at least 0.35 microns to 1.2 microns are allowed through the coating for near solar incident angles typical of GEO and MEO applications.

11. (Original) The method of claim 9 wherein solar energy wavelengths of at least 0.35 microns to 1.3 microns are allowed through the coating for solar incident angles typical of LEO applications.

12. (Original) The method of claim 9 wherein solar energy wavelengths below 0.35 microns and above 1.2 microns are reflected from the coating on solar panels with near-normal incident solar angles typical of GEO and MEO applications.

13. (Original) The method of claim 12 wherein solar energy wavelengths below 0.35 microns is an ultraviolet (UV) rejection area to protect an adhesive from degrading.

14. (Original) The method of claim 9 wherein solar energy wavelengths below 0.35 microns and above 1.3 microns are reflected from the coating on solar panels with a wide range of incident solar angels typical of LEO applications.

15. (Original) The method of claims 13 and 14 wherein solar energy wavelengths below 0.35 microns is an ultraviolet (UV) rejection area to protect an adhesive from degrading.

16. (Original) A method of decreasing a solar cell's operating temperature for higher conversion efficiency comprising the steps of:

providing a coating on an coverglass of a solar panel, the coating being about 8 to 12 microns thick;

placing at least one triple-junction solar cell under the coverglass, the triple-junction solar cell is in a three panel axis or spinning solar panel;

allowing solar energy wavelengths of at least 0.35 micron and through above 1.2 or 1.3 microns pass through the coating; and

reflecting wavelengths below 0.35 micron and above 1.2 or 1.3 microns of solar energy from the coating to reduce an operation temperature at least 20 degrees C.

17. (Original) The method of claim 16 wherein the coating has a minimum impact on the solar energy conversion efficiency.

18. (Original) The method of claim 16 wherein a thermal emittance is maintained.

19. (Original) The method of claim 16 wherein there is at least 4% more power on a Geosynchronous Earth Orbit satellite.

20. (Original) The method of claim 16 wherein there is at least 4% more power on a Medium Earth Orbit satellite.

21. (Original) The method of claim 16 wherein there is at least 8% more power on a Low Earth Orbit satellite.

22. (Original) A method of reflecting unused solar energy by using a NIR wideband reflector coating to reduce overall solar energy absorptance and the cell's operating temperature resulting in an increase in power collection of a triple-junction solar cell on a satellite, the method comprising the steps of:

providing the coating;

placing at least one triple-junction solar cell under the coating;

allowing solar energy wavelengths of at least 0.35 micron and through 1.2 or 1.3 microns to pass through the coating; and

reflecting wavelengths below 0.35 micron and above 1.2 or 1.3 microns of solar energy from the coating to reduce an operation temperature at least 20 degrees C.

23. (Original) The method of claim 22 wherein overall solar absorption is reduced up to 0.15.

24. (Original) The method of claim 22 wherein the TJ solar cell has a temperature conversion efficiency coefficient of -0.055% per degree C.

25. (Original) The method of claim 22 wherein the coating is about 8 to 12 microns thick.

26. (Original) The method of claim 22 wherein there is at least a 1% of absolute solar cell electrical conversion efficiency gain if the solar panel is about 20 degrees C. cooler and the coating is on a solar panel in a Geosynchronous Earth Orbit satellite.

27. (Original) The method of claim 22 wherein there is at least a 1% of absolute solar cell electrical conversion efficiency gain if the solar panel is about 20 degrees C. cooler and the coating is on a solar panel in a Medium Earth Orbit satellite.

28. (Original) The method of claim 22 wherein there is at least a 1.4% of absolute solar cell electrical conversion efficiency gain if the solar panel is about 26 degrees C. cooler and the coating is on a solar panel in a Low Earth Orbit satellite.

29. (Original) The method of claim 22 wherein the triple-junction solar cell has a subcell, the subcell has a current density of 17 mA per square cm.

30. (Withdrawn) A near infrared (NIR) wideband reflector coating for reflecting unused and undesired solar energy to reduce overall solar energy absorptance and increasing power collection of a triple-junction solar cell on a satellite, the coating comprising:

first elements to allow solar energy wavelengths of at least 0.35 micron through 1.2 or 1.3 microns to pass through the coating, to the triple-junction solar cell under the coating; and

second elements to reflect solar energy wavelengths below 0.35 micron and above 1.2 or 1.3 microns from the coating to reduce an operation temperature at least 20 degrees C.

31. (Withdrawn) The coating of claim 30 wherein overall solar absorption is reduced up to 0.15.

32. (Withdrawn) The coating of claim 30 wherein the TJ solar cell has a temperature conversion efficiency coefficient of -0.055% per degree C.

33. (Withdrawn) The coating of claim 30 wherein the coating is about 8 to 12 microns thick.

34. (Withdrawn) The coating of claim 30 wherein there is at least a 1% of absolute solar cell electrical conversion efficiency gain if the solar panel is about 20 degrees C. cooler and the coating is on a Geosynchronous Earth Orbit satellite.

35. (Withdrawn) The coating of claim 30 wherein there is at least a 1% of absolute solar cell electrical conversion efficiency gain if the solar panel is about 20 degrees C. cooler and the coating is on a Medium Earth Orbit satellite.

36. (Withdrawn) The coating of claim 30 wherein there is at least a 1.4% of absolute solar cell electrical conversion efficiency gain if the solar panel is about 26 degrees C. cooler and the coating is on a Low Earth Orbit satellite.

37. (Withdrawn) The coating of claim 30 wherein the triple-junction solar cell has a subcell, the subcell has a current density of 17 mA per square cm.

38. (Withdrawn) The coating of claim 30 wherein the first and second elements are the same compound.